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10/519,488	12/30/2004	Seiji Kato	1787.1006	5664

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EXAMINER	
PHAM, THOMAS K	

ART UNIT	PAPER NUMBER
2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,488	KATO, SEIJI	
	Examiner	Art Unit	
	Thomas K. Pham	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. This action is in response to the amendment filed 10/24/2007.

2. New claim 10 has been added.

3. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Quotations of U.S. Code Title 35

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ541, 550-551 (CCPA 1969)" (MPEP p2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. The Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

Claim Rejections - 35 USC § 103

6. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 08-137508 ("Kajiwara") in view of U.S. Patent No. 5,018,202 ("Takahashi").

Regarding claim 1

Kajiwara teaches the invention including a controlled-object model generation method for generating a model of a controlled object, the method comprising: acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto (e.g. paragraph [0122]); and generating a model of the controlled object by acquiring time series data of values which is outputted from a transfer function when the acquired time series data of manipulated variables is inputted to the transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model), and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum (e.g. paragraphs [0040], [0048], and [0060]-[0062], optimal data).

Kajiwara does not specifically disclose a transfer function assumed in advance.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined in advance of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 2

Kajiwara teaches the invention including a computer-readable storage medium encoded with a controlled-object model generation program used for realization of a controlled-object model generation method, the program causing a computer to execute the method comprising: acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto (e.g. paragraph [0122]); and generating a model of the controlled object by acquiring time series data of values which is outputted from a transfer function when the acquired time series data of manipulated variables is inputted to the transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model), and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum (e.g. paragraphs [0040], [0048], and [0060]-[0062], optimal data).

Kajiwara does not specifically disclose a transfer function assumed in advance.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined in advance of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 3

Kajiwara teaches the invention including a controlled-object model generation method for generating a model of a controlled object, the method comprising: acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto (e.g. paragraph [0122]); acquiring time series data of values which is outputted from each of transfer functions when the acquired time series data of manipulated variables is inputted to the transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model), and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value

derived from the error becomes optimum (e.g. paragraphs [0040], [0048], and [0060]-[0062], optimal data); and selecting, from the plurality of transfer functions having the identified parameters, the optimum one as a model of a controlled object based on the error acquired when the identification is completed or the value derived from the error (e.g. paragraphs [0074] and [0075]).

Kajiwara does not specifically disclose a transfer function assumed in advance.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined in advance of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 4

Kajiwara teaches the invention including a computer-readable storage medium encoded with a controlled-object model generation program used for realization of a controlled-object model generation method, the program causing a computer to execute a method comprising: acquiring time series data of manipulated variables given to a controlled object and time series data of

controlled variables outputted by the controlled object in response thereto (e.g. paragraph [0122]); acquiring time series data of values which is outputted from each of transfer functions when the acquired time series data of manipulated variables is inputted to the transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model), and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum (e.g. paragraphs [0040], [0048], and [0060]-[0062], optimal data); and selecting, from the plurality of transfer functions having the identified parameters, the optimum one as a model of a controlled object based on the error acquired when the identification is completed or the value derived from the error (e.g. paragraphs [0074] and [0075]).

Kajiwara does not specifically disclose a transfer function assumed in advance.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined in advance

of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 5

Kajiwara teaches the invention including a control parameter adjustment method for adjusting control parameters of a controller, the method comprising: generating a model of a controlled object according to a controlled-object model generation process for generating a model of a controlled object (e.g. paragraph [0032]); in order to adjust a control algorithm of the controller, adjusting control parameters of the control algorithm (e.g. paragraph [0033]); and creating and outputting data showing relationship among a desired controlled variable, a manipulated variable and a controlled variable by simulating the state when the controller with the adjusted control parameters controls the controlled object with the use of the controlled-object model and the control algorithm (e.g. paragraphs [0071] and [0072], controlled variable is outputted as the simulation result), wherein the predetermined controlled-object model generation process further comprises: acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto (e.g. paragraph [0122]); and generating a model of the controlled object by acquiring time series data of values which is outputted from a transfer function when the acquired time series data of manipulated variables is inputted to the transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model), and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the

acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum (e.g. paragraphs [0040], [0048], and [0060]-[0062], optimal data).

Kajiwara does not specifically disclose a transfer function assumed in advance.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined in advance of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 6

Kajiwara teaches the invention including a computer-readable storage medium encoded with a control parameter adjustment program used for realization of a control parameter adjustment method, the program causing a computer to execute a method comprising: acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto (e.g. paragraph [0122]); generating a model of the controlled object by acquiring time series data of values which is outputted from a transfer function when the acquired time series data of manipulated variables is

inputted to the transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model), and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum (e.g. paragraphs [0040], [0048], and [0060]-[0062], optimal data); in order to adjust a control algorithm of the controller, adjusting control parameters of the control algorithm (e.g. paragraph [0033]); and creating and outputting data showing relationship among a desired controlled variable, a manipulated variable and a controlled variable by simulating the state when the controller with the adjusted control parameters controls the controlled object with the use of the controlled-object model and the control algorithm (e.g. paragraphs [0071] and [0072], controlled variable is outputted as the simulation result).

Kajiwara does not specifically disclose a transfer function assumed in advance.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined in advance

of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 7

Kajiwara teaches the invention including a control parameter adjustment method for adjusting control parameters of a controller, the method comprising the steps of: generating a model of a controlled object according to a controlled-object model generation process for generating a model of a controlled object (e.g. paragraph [0032]); in order to adjust a control algorithm of the controller, adjusting control parameters of the control algorithm (e.g. paragraph [0033]); and creating and outputting data showing relationship among a desired controlled variable, a manipulated variable and a controlled variable by simulating the state when the controller with the adjusted control parameters controls the controlled object with the use of the controlled-object model and the control algorithm (e.g. paragraphs [0071] and [0072], controlled variable is outputted as the simulation result), wherein the controlled-object model generation process further comprises: acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto (e.g. paragraph [0122]); acquiring time series data of values which is outputted from each of transfer functions when the acquired time series data of manipulated variables is inputted to the transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model), and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum (e.g.

paragraphs [0040], [0048], and [0060]-[0062], optimal data); and selecting, from the plurality of transfer functions having the identified parameters, the optimum one as a model of a controlled object based on the error acquired when the identification is completed or the value derived from the error (e.g. paragraphs [0074] and [0075]).

Kajiwara does not specifically disclose a transfer function assumed in advance.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined in advance of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 8

Kajiwara teaches the invention including a computer-readable storage medium encoded with a control parameter adjustment program used for realization of a control parameter adjustment method, the program causing a computer to execute a method comprising: acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto (e.g. paragraph [0122]); acquiring

time series data of values which is outputted from each of transfer functions when the acquired time series data of manipulated variables is inputted to the transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model), and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum (e.g. paragraphs [0040], [0048], and [0060]-[0062], **optimal data**); selecting, from the plurality of transfer functions having the identified parameters, the optimum one as a model of a controlled object based on the error acquired when the identification is completed or the value derived from the error (e.g. paragraphs [0074] and [0075]); in order to adjust a control algorithm of the controller, adjusting control parameters of the control algorithm (e.g. paragraph [0033]); and creating and outputting data showing relationship among a desired controlled variable, a manipulated variable and a controlled variable by simulating the state when the controller with the adjusted control parameters controls the controlled object with the use of the controlled-object model and the control algorithm (e.g. paragraphs [0071] and [0072], controlled variable is outputted as the simulation result).

Kajiwara does not specifically disclose a transfer function assumed in advance.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined in advance of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 9

Kajiwara teaches the invention including a method for generating a model of a controlled object, comprising generating a controlled-object model (e.g. paragraph [0032]), which receives time series manipulated variables and outputs time series controlled variables in response thereto (e.g. paragraph [0122]), from a transfer function (e.g. paragraphs [0032], [0036], [0042] and [0045], a transfer function which modeled a controlled system; then the transfer function is used in the process of obtaining a dynamic model) derived from the controlled variables and at least one error in an output of the transfer function (e.g. paragraphs [0074] and [0075]).

Kajiwara does not specifically disclose a transfer function determined prior to said generating and optimum parameters.

However, Takahashi teaches transfer function is obtained prior to operation of a system (e.g. col. 6 and 7 in particularly col. 7 lines 8-14).

Kajiwara and Takahashi are analogous art because they are heading to solve the same problem for optimizing a system.

The claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention. Thus, it would be obvious to modify the transfer function that determined prior to said generating and optimum parameters of Takahashi to the system of Kajiwara because the combination would not have change the respective optimization functions of the system.

Regarding claim 10

Takahashi teaches the method of claim 9, wherein the transfer function is not modified while generating the control-object model (e.g. col. 7 lines 8-14).

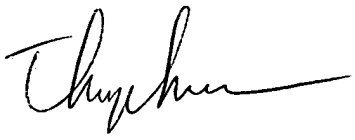
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*; whose telephone number is (571) 272-3689, Monday - Friday from 7:30 AM - 4:00 PM EST or contact Supervisor *Mr. David Vincent* at (571) 272-3080.

Any response to this office action should be mailed to: **Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.** Responses may also be faxed to the **official fax number (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas K. Pham



Primary Examiner